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Please replace the heading beginning at page 23, line 20, with the following heading:

--DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS--

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Please replace the paragraph beginning at page 41, line 14, with the following rewritten paragraph:

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--Incidentally, in Embodiment 2 explained above, the servo bits were formed in the servo pattern region of the information recording medium 3 such that its section is of a triangular groove. In place of this, as shown in Figs. 8(a) and 8(b), grooves 50 and 51 may be formed stepwise in radial section of the information recording medium 3.--

IN THE CLAIMS:

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Please amend claims 1-16 as follows:

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1. (Amended) An information recording medium comprising: a read-out track having a data region forming data bits for reproduced data and a servo pattern region forming servo bits for tracking control, the servo bits having a first groove that is deep in a direction perpendicular to both a length of the read-out track and a depth of the information

recording medium, and a second groove that is deep in a direction opposite to the first groove and having a depth gradually increasing along the read-out track.

2. (Amended) An information recording medium as claimed in claim 1; wherein the first groove and the second groove are triangular in section taken in the direction perpendicular to the length of the read-out track.

3. (Amended) An information recording medium as claimed in claim 1; wherein the first groove and the second groove have a stepped cross-section taken in the direction perpendicular to the length of the read-out track.

4. (Amended) An information recording medium comprising: a read-out track having a data region forming data bits for reproduced data and a servo pattern region forming servo bits for tracking control, the servo bits having a first groove extending in a direction perpendicular to both a length of the read-out track and a depth of the information recording medium, and a second groove extending in a direction opposite to the first groove.

5. (Amended) An information recording medium comprising: a read-out track containing a unit of information comprised of a groove having a depth which increases

constantly or gradually in a direction perpendicular to both a length of the read-out track and a depth of the information recording medium.

6. (Amended) An information recording medium comprising: a read-out track having a groove containing a unit of information, the groove being saw tooth-shaped in a section taken in a direction perpendicular to a read-out direction, the unit of information being formed along a slant surface of the saw tooth-shaped groove.

7. (Amended) An information reproducing apparatus comprising:

an information recording medium having on a read-out track a data region forming data bits for reproduced data and a servo pattern region forming servo bits for tracking control, the servo bits being arranged with a constant deviation alternately left and right with respect to a center axis of the read-out track;

a reproducing probe for reading the read-out track, the reproducing probe having a microscopic aperture for producing near-field light and for directing the near-field light toward the read-out track during reading of the read-out track so that the near-field light is scattered by the servo bits formed in the servo pattern region of the read-out track;

photo-detecting means for detecting reflection scattering light generated as a result of the scattering of the near-field light by the servo data and for outputting a detection signal;

comparison operating means for comparing a detection signal outputted from the photo-detecting means with a synchronization signal determined in accordance with an interval of the servo bits and for generating and outputting a differential signal; and

reproducing-probe-position control means for controlling a position of the reproducing probe in accordance with a differential signal outputted by the comparison operating means.

8. (Amended) An information reproducing apparatus comprising:

an information recording medium having on a read-out track a data region forming data bits for reproduced data and a servo pattern region forming servo bits for tracking control, the servo bits having a first groove that is deep in a direction perpendicular to both a length of the read-out track and a depth of the information recording medium, and a second groove that is deep in a direction opposite to the first groove and having a depth gradually increasing along the read-out track;

a reproducing probe for reading the read-out track, the reproducing probe having a microscopic aperture for producing near-field light and for directing the near-field light toward the read-out track during reading of the read-out track so that the near-field light is scattered by the servo bits formed in the servo region of the read-out track;

photo-detecting means for detecting reflection scattering light generated as a result of the scattering of the near-field light by the servo data and for outputting a detection signal;

comparison operating means for comparing a detection signal outputted from the photo-detecting means with a synchronization signal determined in accordance with an interval of the servo bits and for generating and outputting a differential signal; and

reproducing-probe-position control means for controlling a position of the reproducing probe in accordance with a differential signal outputted by the comparison operating means.

9. (Amended) An information reproducing apparatus comprising:

an information recording medium having on a read-out track a data region forming data bits for reproduced data and a servo pattern region forming servo bits for tracking

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control, the servo bits having a first groove extending in a direction perpendicular to both a length of the read-out track and a depth of the information recording medium, and a second groove extending in a direction opposite to the first groove;

a reproducing probe for reading the read-out track, the reproducing probe having a microscopic aperture for producing near-field light and for directing the near-field light toward the read-out track during reading of the read-out track so that the near-field light is scattered by the servo bits formed in the servo region of the read-out track;

photo-detecting means for detecting reflection scattering light generated as a result of the scattering of the near-field light by the servo data and for outputting a detection signal;

comparison operating means for comparing a detection signal outputted from the photo-detecting means with a synchronization signal determined in accordance with an interval of the servo bits and for generating and outputting a differential signal; and

reproducing-probe-position control means for controlling a position of the reproducing probe in accordance with a differential signal outputted by the comparison operating means.

10. (Amended) An information reproducing apparatus comprising:

an information recording medium containing a unit of information comprised of a groove having a depth which increases constantly or gradually in a direction perpendicular to both a length of the read-out track and a depth of the information recording medium;

a reproducing probe for reading the read-out track, the reproducing probe having a microscopic aperture for producing near-field light and for directing the near-field light toward the read-out track during reading of the read-out track so that the near-field light is scattered by the servo bits formed in the servo region of the read-out track;

photo-detecting means for detecting reflection scattering light generated as a result of the scattering of the near-field light by the servo data and for outputting a detection signal; and

reproducing-probe-position control means for controlling a position of the reproducing probe in accordance with an intensity of the detection signal outputted by the photo-detecting means.

11. (Amended) An information reproducing apparatus comprising:

an information recording medium having a groove containing a unit of information, the groove being saw

tooth-shaped in a section taken in a direction perpendicular to a read-out direction, the unit of information being formed along a slant surface of the saw tooth-shaped groove;

a reproducing probe for reading the read-out track, the reproducing probe having a microscopic aperture for producing near-field light and for directing the near-field light toward the read-out track during reading of the read-out track so that the near-field light is scattered by the servo bits formed in the servo region of the read-out track;

photo-detecting means for detecting reflection scattering light generated as a result of the scattering of the near-field light by the servo data and for outputting a detection signal; and

reproducing-probe-position control means for controlling a position of the reproducing probe in accordance with an intensity of the detection signal outputted by the photo-detecting means.

12. (Amended) An information reproducing apparatus comprising:

an information recording medium having a read-out track containing information;

a reproducing probe for reading the read-out track of the information recording medium, the reproducing probe having microscopic apertures for producing near-field light

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and for directing the near-field light toward the read-out track during reading of the read-out track so that the near-field light is scattered by the information contained in the read-out track, the microscopic apertures extending at an interval in a direction perpendicular to both a direction of the read-out track and a direction of a depth of the information recording medium;

photo-detecting means for detecting reflection scattering light generated as a result of the scattering of the near-field light by the information contained in the read-out track and for outputting a detection signal; and

reproducing-probe-position control means for controlling a position of the reproducing probe in accordance with an intensity of the detection signal outputted by the photo-detecting means.

13. (Amended) An information recording medium comprising: a read-out track having a data region forming data bits for reproduced data and a servo pattern region forming servo bits for tracking control, two of the servo bits being asymmetric in section about a direction of the read-out track and symmetric in section about a center axis of the read-out track.

14. (Amended) An information recording medium comprising: a read-out track having a unit of information to be recorded/reproduced by a probe, the unit of information being asymmetric about a direction of the read-out track.

15. (Amended) An information recording medium comprising: a read-out track having a slant surface and a unit of information formed along the slant surface, the read-out track being asymmetric about an axis extending in a direction generally perpendicular to a scanning direction of a probe for recording/reproducing the unit information of the read-out track.

16. (Amended) An information recording/reproducing apparatus comprising:

an information recording medium according to claim 13;

a probe for recording/reproducing the data and servo bits in the data and servo pattern regions of the read-out track of the information recording medium, the probe having a microscopic aperture for producing near-field light and for directing the near-field light toward the read-out track so that the near-field light is scattered by the servo bits formed in the servo region of the read-out track;

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photo-detecting means for detecting reflection scattering light generated as a result of the scattering of the near-field light and for outputting a detection signal; and

probe-position control means for controlling a position of the probe in accordance with an intensity of the detection signal or a differential signal between the detection signal and a reference signal.

Kindly add the following new claims 17-20:

17. An information recording/reproducing apparatus comprising:

an information recording medium according to claim 14;

a probe for recording/reproducing the unit of information of the read-out track of the information recording medium, the probe having a microscopic aperture for producing near-field light and for directing the near-field light toward the read-out track so that the near-field light is scattered by the unit of information of the read-out track;

photo-detecting means for detecting reflection scattering light generated as a result of the scattering of the near-field light and for outputting a detection signal; and

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probe-position control means for controlling a position of the probe in accordance with an intensity of the detection signal or a differential signal between the detection signal and a reference signal.

18. An information recording/reproducing apparatus comprising:

an information recording medium according to claim 15;

a probe for recording/reproducing the unit of information of the read-out track of the information recording medium, the probe having a microscopic aperture for producing near-field light and for directing the near-field light toward the read-out track so that the near-field light is scattered by the unit of information of the read-out track;

photo-detecting means for detecting reflection scattering light generated as a result of the scattering of the near-field light and for outputting a detection signal; and

probe-position control means for controlling a position of the probe in accordance with an intensity of the detection signal or a differential signal between the detection signal and a reference signal.

19. An information recording medium comprising: a read-out track having a servo pattern region; and a plurality

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of servo bits formed in the servo pattern region for tracking control, the servo bits having first grooves extending deep in a direction perpendicular to both a depth of the information recording medium and a length of the read-out track, and second grooves extending deep in a direction opposite to the first grooves and alternating with the first grooves.

20. An information recording medium according to claim 19; wherein each of the first grooves has a depth which gradually increases along the read-out track.

IN THE DRAWINGS:

Submitted herewith is a copy of Fig. 1 on which has been marked in red a proposed drawing revision. Upon approval of the drawing revision and allowance of the application, the formal drawings will be accordingly revised.

IN THE ABSTRACT:

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Delete the abstract now of record and insert therefor the new abstract submitted herewith on a separate sheet.

ADDITIONAL FEES:

Submitted herewith is a check in the amount of \$80.00 to cover the fee for one (1) extra independent claim in excess of those already paid for. Should it be determined